

The Further Mathematics Support Programme

Problem-Solving Masterclasses for Sixth Formers in Surrey or Sussex

A series of workshops aimed at developing skills in problem solving, proof and communication in mathematics is offered to sixth form students.

The sessions offer students the opportunity to develop their problem-solving skills by trying out challenging problems that require deep mathematical thinking, and so help them achieve the grades they need to get into the university or career their choice. Students will look at problems from a range of sources including Sixth Term Examination Papers. Attending the sessions will enrich students' mathematical experience.

These sessions are for anyone who is studying A-level mathematics and who enjoys solving challenging problems. Appropriate sessions for both year 12 and year 13 students are included.

They will take place in university teaching rooms on Saturday mornings from 9:30 to 12:30 as follows:



Sussex University:

5 Nov, 19 Nov, 3 Dec, 7 Jan, 21 Jan, 4 Feb, 4 Mar, 18 Mar, 1 Apr, 29 Apr.

Surrey University:

12 Nov, 26 Nov, 10 Dec, 7 Jan, 21 Jan, 4 Feb, 4 Mar, 18 Mar, 22 Apr, 6 May;



Course aims:

- allow students to attempt problems both in groups and on their own
- get students thinking about writing and presenting their solutions to problems
- give students a chance to explore areas of maths not in the standard curriculum

Course fees and application:

Places are limited and we expect students to commit to the whole course. Tuition is subsidised for students at state schools, so the fee for the whole course is just £30 per student.

To apply, students should complete the online form at

<https://goo.gl/forms/PGc0z1P2PdfL8eDr2>

If you have any questions, please e-mail:

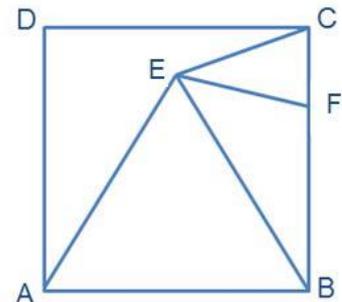
(Surrey) stevecollins@furthermaths.org.uk or

(Sussex) hazelsantineer@furthermaths.org.uk

Some problems for you and your students to try!

These are reproduced with the permission of the United Kingdom Mathematics Trust <http://www.ukmt.org.uk/> and feature in “A Problem Solver’s Handbook” by Andrew Jobbings.

The diagram shows a square $ABCD$ and an equilateral triangle ABE . The point F lies on BC so that $EC = EF$. Calculate the angle FEB .



Sam wishes to place all the numbers from 1 to 10 in the circles, one to each circle, so that each line of three circles has the same total. Prove that Sam’s task is impossible.

